DU
NA
MONTEREY, CALIFORNIA 93943

MANAGING PRODUCTIVITY

BY

MARGARET L. BROWN

A REPORT PRESENTED TO THE GRADUATE COMMITTEE
OF THE DEPARTMENT OF CIVIL ENGINEERING IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ENGINEERING

UNIVERSITY OF FLORIDA

SUMMER 1985

T226044

ACKNOWLEDGEMENTS

I would like to acknowledge the special support and prayers I received from my ministers Mr. Bob Perry and Mr. David Dalton and my good friend Joseph Jolly, for encouragement and diligence to see this report through, and most of all to our Heavenly Father, whose grace and blessings guided me throughout the writing of this report:

"Commit your way to the Lord, Trust in Him, and He will do it" (Psalm 37:5)

TABLE OF CONTENTS

1.	Introduction	1
2.	Causes of Productivity Impediments	3
	Cause One	3
	Cause Two	4
	Cause Three	4
	Cause Four	5
	Cause Five	6
3.	Motivation And Productivity	7
	Maslow's Hierarchy of Needs	7
	Hertzberg's Motivation/Hygiene Theory	8
	MacGregor's Theory X and Theory Y	9
	Does Money Motivate?	14
	Is The Work Ethic Dead?	15
4.	Managing the Motivated Employee	18
	Managing The White Collar Worker	20
	Managing The Blue Collar Worker	29
5.	Managing Productivity By Objectives (MPBO)	44
	How The MBO System Works	44
	The Do's and Don'ts of MBO	56
6.	Measuring Productivity	62
	What Makes Productivity Measurement Difficult	62
	The Value of Quantifying Work Expectations	65
	Productivity Measurement Techniques	66
7.	Discrimination in MBO/MPBO Systems	69
	MBO as a Potential Vehicle for Discrimination	70
	Steps to Minimize Discrimination Risks	91
8.	Summary	93

CHAPTER I

INTRODUCTION

Until recently, productivity in the construction industry has been on the decline during the past decade. There are numerous impediments to productivity, with these causes being interrelated and resulting in a ripple effect on the total productivity.

In his book, "Improving Total Productivity", Paul Mali makes an analogy between the examination of the causes of the productivity crisis and the story of the three blind men examining the different parts of the elephant, coming up with their various individual conclusions: One blind man felt the side of the elephant and decided an elephant was like a wall. When he pinched the "wall", the wall moved away. The blind man who was holding the tail decided an elephant was like a rope, and when he pulled the rope, it swished from side to side. The blind man who felt the leg decided the elephant was like a tree, and when he stepped on the foot, the "tree" moved up and away. However, no single man correctly described the whole elephant and no one was able to make the whole elephant move.

Although there are individuals in the construction industry who may have the "big picture", impediments to

productivity take the form of the various individuals with their misinterpretations of the "whole elephant", along with the various individuals who are only "moving parts of the elephant" and most likely not in a harmonious motion which would cause "the whole elephant to move".

Since the causes of productivity impediments are so numerous and diverse, this report will first provide a general overview of some of the broad categories of productivity impediments, along with some very general suggestions for correcting these impediments. The report will then focus on those areas which the writer feels have the biggest impact on productivity: employee motivation, employee management, managing productivity by objectives, measuring productivity and finally discrimination in MBO systems.

CHAPTER II

CAUSES OF PRODUCTIVITY IMPEDIMENTS

As discussed in the first chapter, a broad overview of various causes of productivity impediments will be presented here to illustrate its synergistic character. One can keep in mind the "moving the whole elephant" analogy as we see that each impediment has possible solutions, but only through implementing these solutions in concert with one another, will the desired outcome be effected.

Cause One

"Delays and time lags result from diffused authority and inefficiency in complex, superorganizations" (Mali, 1978, p. 27). Here is where the effects of not picturing the whole elephant and making only parts of it move are most felt. "To say that most companies have something less than synergism is an understatement" (Ross, 1977, p. 15). Although it cannot be expected to have every individual in a large organization aware of the big picture, the concept of "span of control" plays a key role here. Also, "complex procedures must be simplified to bring accountability and reaction time to where decisions and responsibilities are located" (Mali, 1978, p. 28). With computers becoming smaller and less expensive, it is increasingly beneficial to place them

lower and lower throughout the chain of command to increase accountability and measureability.

Cause Two

"Spiraling inflation results from giving rewards and benefits without requiring the equivalent in productivity and accountability" (Mali, 1978, p. 27). Each individual moving their part expects automatic cost of living increases each year along with improved benefits without a proportionate increase in productivity. In fact, "records of many construction companies show that as wages have risen, productivity has fallen" (Drewin, 1982, p. 3). The result of this is a chicken/egg cycle: as wages increase, (without an increase in productivity) inflation increases, and vice versa, but no one is quite sure which comes first. It is easy to blame labor unions for this, as productivity growth can threaten job security, and unions will not encourage anything which threatens job security. The construction industry could try leaning harder towards the merit pay system and away from automatic pay increases, but this is not likely to sit well with the unions. A viable alternative is "performance contracting", vice time contracting.

Cause Three

"Shocking wastes of resources result from our inability to measure, evaluate, and manage the productivity of a growing white collar work force" (Mali, 1978, p. 25). It is extremely difficult to define the

expansion.

Cause Five

"Low motivation prevails among a rising number of affluent workers with new attitudes" (Mali, 1978, p. 28). The traditional work ethic is changing. We shall see that Management by Objectives (Hereinafter referred to as "MBO") has a direct effect on the motivation of employees, and this increased motivation coupled with more effective management through MBO has a profound influence on productivity improvement.

CHAPTER III

MOTIVATION AND PRODUCTIVITY

One of the basic concepts of human motivation is that when employees are provided an opportunity to use their talents and potential, they perform at a higher level of productivity, make fewer mistakes, and achieve a higher level of personal satisfaction (Ross, 1977, p. 25). The evolution of modern motivation theory can be traced through the teachings of Abraham Maslow, Douglas McGregor, and Frederick Hertzberg:

Maslow's Hierarchy Of Needs

In his book "Motivation and Personality", Maslow describes the drives to fulfill unfilled needs that motivate everyone. There are five levels of needs, which each level needing to be fulfilled before moving to the next level:

A. Physiological Needs. These are the basic survival needs, including food, shelter, warmth, sex, freedom from pain, etc.

B. Security Needs. These needs are fulfilled when one is satisfied that physiological needs will remain fulfilled.

C. Social Needs. These are the needs for a feeling of belonging to a group and being loved.

D. Ego Needs. These include self esteem, competency,

recognition, and status.

E. Self Actualization Needs. This highest level is difficult to define and is rarely fulfilled, and in many cases, it is seldom even sought after. It is the need to achieve one's full potential in the most creative, self-motivated way.

In the United States today, there are few individuals who do not have their first two levels of needs satisfied, thus, efforts to motivate by fulfilling these needs will be counterproductive. A manager's role will now focus on fulfilling the needs of levels three and four to motivate employees. It is interesting to note here that money is not the motivator it is popularly thought to be. A person may work harder for the promise of money, but since that lower level need is already satisfied, that person will not be motivated. The distinction is that money has become a behavior reinforcement, analogous to the "carrot" or the "stick".

Hertzberg's Motivation/Hygiene Theory

This theory revolves around the principle that there is a minimum acceptable level of psychological and physical needs which must be met in the workplace. These can include cleanliness, noise levels, adequate space, job security, safety, smells, temperature levels, transportation, policies and procedures and relations with supervisors and peers. In his book, "Work and Nature of Man", Hertzberg calls these workplace

environmental conditions "hygiene factors" since a failure to minimally fulfill these will cause dissatisfaction, and the organization will suffer. Once these needs are met, management can focus on motivation factors, such as achievement, growth, participation, and responsibility.

MacGregor's Theory X And Theory Y

This third popular theory of motivation and human behavior uses the classical approach to managerial styles, represented by Theory X, and the human relations approach, represented by Theory Y. Theory X maintains that humans avoid work as much as possible, derive no basic satisfaction from work, require constant and direct supervision, have no inherent creativity and have little ambition or enthusiasm for their work. Theory Y takes a much more positive look at the human, maintaining that humans have a basic desire to work and require little direction once motivated; They derive their identity and satisfaction from their jobs and are individually very creative.

Now that we have seen the foundations of motivation theory, we see that the first step in developing a system for managing productivity is identifying those job factors that motivate and hence affect the productivity of subordinates. The second step is operationalizing those factors; that is, combining theory with practice. Ross summarizes nine important factors that need to be

taken into account if an organization is to effect the changes that are necessary to increase productivity and profitability:

1. Work that is challenging, creative, and interesting and provides an opportunity for "stretch" performance.

2. Participation in decisions that have a direct affect on the individual's job.

3. Compensation that is tied to performance and to sharing in productivity gains. This requires realistic appraisal.

4. Communication and authority channels that are simplified.

5. Supervision that is competent.

6. Recognition of achievement.

7. Self-development opportunity.

8. Opportunity for stewardship, care of and attention to customer and co-worker needs.

9. Organizational styles and patterns that are more flexible.

Ross goes on with a list of basic techniques, methods and programs, which he calls "Results Management Methods", to illustrate the development of a system for managing subordinates:

1. Job Development. Also known as job enlargement, job development takes the approach that once an individual becomes familiar and comfortable with their task at hand, they are ready to take on additional responsibilities.

The key word here is "responsibility" vice "extra work". This additional responsibility is popularly referred to as "vertical loading", with "horizontal loading" referring to the addition of similarly challenging work. Along with vertical loading, another fundamental principle of job development is "closure". Closure provides the employee with a sense that they have contributed to the organization, and they are actually able to see the end results of their work. The third fundamental principle is feedback on performance. Feedback must be timely in order to be effective, and it is best provided in terms of performance against predetermined goals. We can see where this points to MBO as a viable tool for effective feedback.

2. Appraisal. Closely related to the concept of feedback is the process of appraisal. Whereas feedback refers to how well the job as a whole was accomplished, appraisal refers to the efforts of each individual. Performance appraisal is an unpopular subject with both employees and employers for various reasons: (1) Many supervisors feel uncomfortable with criticizing a subordinate; they want their subordinates to "like" them and they don't want to argue with them. (2) Supervisors sometimes feel inadequately trained to perform an appraisal and likewise, the subordinate may feel the supervisor has inadequate knowledge to give them a fair appraisal. (3) Some supervisors and employees feel that

some appraisal methods are arbitrary and therefore useless.

It is unfortunate that the performance appraisal has become such an uncomfortable subject, because, properly used, it has a great potential for improved motivation, communication, self-development, and hence productivity. Ross discusses five broad categories of deficiencies in performance appraisal practice:

1. Focusing On The Reward/Punishment Aspect. Here, the real purpose of the performance appraisal becomes clouded as the supervisor lingers on more of the behavioral aspects of the employee, rather than their actual performance. If the employee gets merely a pat on the back and "keep up the good work", with no specific areas of accomplishment identified, the employee can walk away with a false sense of security, maybe even expecting a raise, but having no concrete ideas where the areas for improvement are. "There is always room for improvement" may be a trite expression, but it holds true, and if an employee is no longer feeling the challenge for improvement, but instead is beginning to feel complacent about their job, serious impacts on motivation, and hence productivity, can result.

On the other hand, if the appraisal turns into a faultfinding session, the employee has a tendency to start taking the criticism personally and the appraisal can quickly regress into a personality clash between the

employee and the subordinate.

2. Appraisals Based On Personality Traits. These are closely related to faultfinding sessions, but here the attack on the personality is intentional, and in no case is the subordinate motivated to better productivity. Managers should avoid appraisals which rate personality traits such as loyalty, initiative, cooperation, attitude and so on.

3. Emphasis On The System. This is when the emphasis is placed on "doing the right thing" vice "doing things right". When managers come up with an appraisal which measures the extent to which the employee did the right thing, they can think this appraisal is "good", but they need to step back and look at what it is good for. An objective look will show that they are emphasizing the ends instead of the means.

4. Confusion About The Objectives Of The Performance Review. Many employees have no idea why they are being appraised, and consider it merely another function of personnel administration; another form of "hassle". "Improved productivity" must be continually stressed as the objective of performance appraisal.

5. Nonproductive Behavior. This revolves around personal judgement and emotion. Employees feel that something is being done to them rather than for them.

One last aspect of problems with performance appraisal is their potential for being vehicles for

discrimination. This will be discussed in full detail in the chapter titled "Discrimination in MBO systems".

Does Money Motivate?

Although this subject has been briefly touched upon already, it is worth further discussion to examine the behavioral viewpoint versus the management viewpoint of money as a motivator.

The Behavioral Viewpoint

Behaviorists believe that wants and needs are what cause changes in behavior. A person wants to satisfy internal needs, and money represents a purchasing power for present and future needs. The harder that a person tries to accumulate money, the more that can be said about that person's attitude about present and future needs. The amount of a person's drive is related to their assessment of the adequacy of their funds for meeting future needs. "Therefore, to the behaviorist, money does not motivate, but satisfying individual needs does. Money is the "score" of how well an individual will meet those needs" (Mali, 1978, p. 283).

The Management Viewpoint

The prime concern of any manager is how to get a person to do a job that also meets the needs of the organization. Although money and the way it is dispersed has a high influence on behavior, the manager cannot raise and lower salaries at will. The manager must find a compromise between the needs of the individual and the

needs of the organization. "Therefore, to the manager, money does motivate because it is the means by which a host of present and future needs can be made coincident between organizations and employees" (Mali, 1978, p. 283). Although money has been found by the manager to be a motivator for the employee, it also happens to be the most expensive motivator. That is why managers generally seek nonfinancial motivators, but these are considered an adjunct to financial motivators.

Is The Work Ethic Dead?

The new generation of "baby-boom" workers, who will make up about half of the workforce in the 1980s, sees a well-paid job as a birthright. This is in direct contrast to the workforce of those over age 35 who have sought affluence and the "good life" through hard work, upward mobility, and self-denial. The "baby-boom" worker will be far more interested in career and personal development programs and there will be a much greater emphasis on leisure time and how to obtain more of it. But does this mean that the work ethic is dead? Mali thinks this question is synonymous with "Is the value of work dead?", to which he answers an emphatic "NO!". The value and meaning of work is merely evolving. Mali cites several forces in society which are feeding this evolution:

1. Increasing Educational level. The rising level of educational background of employees brings with it both

higher skills to offer employers and a higher level of awareness and expectations.

2. Travel and Mobility. Employees travel more than any of their predecessors in history. This traveling leverage offers employees more alternatives and options in different labor markets and organizations than at any time in history. These broader options allow them to select alternatives for the meaning of work in their lives.

3. Growing Affluence. In spite of recessions and inflation, economic affluence continues to grow, greatly reducing the emphasis on the necessities of life. More often than not, pay and security are taken for granted. This allows employees to seek gratification on higher levels of needs. An identifiable self-concept, self-fulfillment, and self-esteem are sought by affluent workers.

4. Erosion of Traditional Authority. Values from schools, the family, churches, and self-responsibilities and self-conceived forms of fulfillment conflict drastically with the traditional boss-subordinate structure in organization. Employees are looking for individual fulfillment in the context of the meaning of work.

5. Social Commitment. The growing appreciation of the role and affects of an organization in a community stresses the need for interdependence and connection with

community needs and concerns. Employees are concerned with how their work output affects the community and how work contribution gives them identity, self-concept, and self-esteem.

Now that we have seen what motivates the employee, we can examine the techniques for managing the motivated employee for productivity improvement.

CHAPTER IV

MANAGING THE MOTIVATED EMPLOYEE

The number of white collar workers continues to increase. By 1956, the number of white collar workers equalled the number of blue collar workers. Traditionally, efforts at improving productivity had been aimed at the blue collar worker, but the unique character of the white collar worker demands new approaches for managing productivity. Efforts to employ the old blue collar strategies have undoubtedly had an influence on the decline in productivity. Mali discusses this possibility as follows:

> Between 1850 and 1889, when the country was predominately agricultural and beginning to industrialize, the annual productivity rate increased to 1.5 percent. Between 1889 and 1919, as industrialization progressed, the rise advancedto 1.6. After World War II the productivity rate averaged close to 3.5 percent per year. In recent years-at about the same time when the large white collar work force emerged- the productivity rate has dropped to about 3 percent.

The majority of jobs can be grouped into one of four major categories:

1. White Collar. This includes professional and technical workers such as doctors, lawyers, engineers, nurses, administrators, computer programmers, public administrators, etc.

2. Blue Collar. This includes craft and vocational

workers such as carpenters, plumbers, electricians, equipment and machine operators, etc.

3. Service. This includes food workers, such as cooks, waiters, waitresses, bartenders, hospital employees, police officers, guards, etc.

4. Farm Workers. This includes farm laborers, farm equipment operators, foremen, and managers.

The construction industry deals primarily with white and blue collar workers, so this discussion will be limited as such.

Mali gives a good summary of blue collar versus white collar characteristics which illustrates the need for an entirely different approach towards managing productivity in each group:

	Blue Collar Characteristics	White Collar Characteristics
1.	Equipment oriented	Service oriented
2.	Physical workers	Knowledge workers
3.	Works with hardware	Works with people and information
4.	Vocational education	College education
5.	Nonprofessional	Professional
6.	Goes to a place of work	Work can be completed regardless of place
7.	Output easily inventoried	Output not easily inventoried
8.	Nonexempt compensation	Exempt compensation
9.	Loyalty to unions	Loyalty to profession
10.	Focuses on monetary rewards in acceptable work	Focuses on challenging work with acceptable

		monetary rewards
11.	Equipment and tools needed for productivity	Skill, information, and time needed for productivity
12.	Productivity can be forced since work is visible and tangible	Productivity cannot be forced since work is not visible and intangible
13.	Results are immediate and short range	Results are delayed and long range

Managing The White Collar Worker

The growing white collar work force, along with the evolving work ethic and changes in tradition, will present new challenges for managers. Mali discusses five such implications:

1. Women will compete on more nearly equal terms with men. Women comprise 38 percent of the work force today, and this number is steadily increasing as more women become single heads of households and the number of dual careers increases. Since white collar jobs do not carry the physical demands of blue collar jobs, the eventual expected percentage of 50 percent women in the workforce is likely to be concentrated in white collar jobs.

2. Part-time older workers are a new growth sector of the work force. Again, since physical strain and endurance are not characteristic of white collar jobs, and peak demands can be met by part-time employment, the white collar field is becoming increasingly attractive to the older worker.

3. Strategies in handling white collar unions will be different from those for blue collar unions. As unionism spreads to the white collar world, traditional practices of dealing with unions, such as collective bargaining, must be modified, since, for instance, there is no measurable output of the white collar worker's job.

4. Work of white collar workers must be focused more on individuals. Personal identification with work is an essential element of white collar jobs, as opposed to blue collar jobs where the fruits of labor are seldom realized. The major causes of alienation among white collar workers are: powerlessness, meaninglessness, isolation, and self-estrangement.

5. The line between work and leisure is difficult to define. Since white collar workers generally derive their pleasure from a job well done, it is difficult to determine where work lets off and leisure begins; sometimes, "leisure" time is spent pursuing activities considered to be "work".

Now that we understand what motivates the white collar worker, and what some of the implications are for the growing white collar work force, we can begin to examine various strategies for achieving higher productivity from them. Mali outlines a basic seven step process:

Step One: Develop Productivity Mindedness

The white collar worker needs to be convinced that

productivity is not something the other fellow ought to deliver. According to a Harris poll, only one third of white collar workers believes their productivity can be improved. They not only need to be convinced that everyone's productivity can be improved, they need to be enthusiastic about it. These are some of the attitudes that work against productivity improvement: (Mali, 1978, p. 173)

> You can't measure my work since its (sic) largely conceptual.
>
> If it's a service, the taxpayers will want it.
>
> Don't ask me; the supervisor is supposed to do it.
>
> I quit. The company doesn't pay enough.
>
> It's impossible to write quality objectives.
>
> This is a lousy place to work. All they think about is costs.
>
> You cannot manage people like machines.
>
> I don't like our negotiated package; let's appeal to the courts.

Productivity mindedness is not so much what you say as what you do, but here are some statements which reflect an attitude which works for productivity improvement: (Mali, 1978, p. 173)

> I would like to try this measure for evaluating my work.
>
> We've got to make a persuasive presentation if the council is to buy it.
>
> Solving problems and improving productivity is part of my job.
>
> I'd like to try MBO to see if it works.

Let's do something about these guys who won't cooperate.

We got as much as we could at the negotiations.

The responsibility of developing productivity mindedness lies with the supervisor. The supervisor needs to create an air of open communication so that if negative attitudes exist, they can be turned around, and if positive attitudes exist, they can be reinforced. One of the most destructive positions a supervisor can take is "do as I say, not as I do". It is management's duty to convey the importance of productivity, not only through their words, but through their actions as well. Productivity orientation is very effective at the time of employment, but it is also important to have periodic "refresher" courses. Mali provides the following suggestions for implementing an organized program for developing productivity mindedness: (p. 176)

1. A memorandum or letter from the president, chief administrator, or organizational head sent to all employees indicating the productivity improvement program.

2. A series of articles on productivity in newsletters or employees' paper giving an understanding of what productivity is, its relationship to job security, and what it means personally for each employee.

3. A productivity improvement slogan contest offering cash prizes or other incentives.

4. A series of displays showing how waste, rejected materials, customer complaints, and poor attitudes affect productivity.

5. A productivity comparison profile showing how different departments compare.

6. A special organizationwide committee to study and examine ways and means of improving productivity. This committee would be charged with responsibility for identifying productivity problems and ways of handling these problems and for following the progress made in their solution.

7. A series of special films or slides for showing to employees. These should cover objectives of a productivity improvement program and how its results could benefit employees.

8. A special orientation presentation given to all new employees at the time of employment intended to describe how new employees can perform work for maximum productivity.

9. A special series of courses for supervisors and managers presenting in considerable detail the nature of productivity, how to manage it, how to measure it, how to improve it, and how to control it.

Step Two: Use Equipment Aids Where Possible

Although it is rare for a white collar worker to be working at their true peak, the nature of their work leads them to believe they are working at their peak, and any efforts to increase their productivity without some sort of mechanical aid will be viewed as a negative reflection of their work. There is hardly a white collar worker who doesn't enjoy a new "gadget", and any thoughts of the presentation of the new "gadget" being a slur on their output are quickly replaced by the challenge of becoming proficient with it. This is not to say that increases in productivity will always result from supplying the white collar worker with new "toys" every time productivity starts to lag; it is a well known

fact that improper planning for and selection of equipment, coupled with inadequate training, has all too often resulted in a productivity impediment. There are certain guidelines to follow when selecting equipment:

1. Identify the area for improvement.
2. Identify the most feasible equipment for achieving that improvement.
3. Insure that the equipment actually increases the performance output of the worker.
4. Insure that the equipment actually improves the quality of the output.

An example for this could be a small construction management firm, where project managers keep track of all phases and evolutions of contracts by hand. An obvious solution would be to computerize operations. The trick is in choosing the optimal type of computer and/or software to accomplish this. Will a personal computer suffice? Is training available? Is there adequate "user-friendly" software available? Is the system so complicated that the project manager spends more time trying to manipulate the computer than they spent doing the operations by hand in the first place? Is this merely the "learning curve", and things will get better? Is the output actually more accurate and up to date? These are some of the questions which must be answered, along with the usual questions of initial costs, maintenance, and return on investment.

Step Three: Increase Discretionary Content On Jobs

Traditionally, management has used a prescriptive approach to managing blue collar workers. The work was cut and dried with well defined limits, and any decisions to be made were programmed decisions. It is easy to see why this strategy does not carry over well into white collar jobs. By their nature, white collar workers desire a freer rein in carrying out their responsibilities, and in many cases, not having the option to exercise their own discretion in special cases greatly hampers productivity. This is not to say that there should be no prescriptive aspects to a white collar job; the job should be redesigned to incorporate an optimal combination.

Step Four: Replace Performance Appraisals With Productivity Appraisals

We have already discussed one of the problems with performance appraisals, where supervisors place the emphasis on "doing the right thing" instead of "doing things right". These appraisals evaluate the output of an individual's effort, which is a necessary element for a productivity measurement, but it usually does not focus on the resources consumed in the process: a vital element of productivity measurement. Since performance appraisals are not generally based on measurements, the employee has no quantitative goal to strive for. The

initiation of a productivity appraisal system is the same as the initiation of a general MBO system: Goals are participatively set between supervisor and subordinate, and the progress towards these goals is periodically reviewed. This is probably even more important for the blue collar worker, than the white collar worker, so it will be discussed in further detail in that section.

Step Five: Give Time Management Training

Time is the white collar worker's most precious resource, next to knowledge. If it is used inefficiently, low productivity results. Since most white collar workers are salaried, you can see that costs will remain constant, but since output can go up, down, or stay the same, their productivity ratio can increase, decrease, or stay the same. There are many types of time management seminars available. All of them stress the same basic idea: separation of work, prioritization and delegation. Newly commissioned naval officers get their indoctrination to time management with the infamous "in-basket" exercise. They are confronted with what would be a typical full in-basket on any given morning, and they are set to the task of separating the pile into stacks of priority "A", "B", and "C", with "A" being "urgent", "B" being "important" and "C" being able to rest for awhile. The stack is gone through again to determine which items can be delegated, going through the "A" stack first, and so on. Time management training can also include

assistance in scheduling skills and the art of recognizing time robbers.

Step Six: Motivate

We have already discussed what motivates the employee in some detail, but have not discussed a systematic approach for application of motivation methods. All too often, supervisors wait until they see a decrease in motivation before they apply motivation techniques. Motivators should be applied according to schedule; in fact, they should become part of the schedule. The lack of a systematic approach of applying motivators to white collar workers can nullify the effects of the motivators. Even when a systematic approach has been developed, the manager should remember that motivators change with changing needs and wants and they can become demotivators. The system should be dynamic.

Step Seven: Manage Productivity By Objectives

MBO has already enjoyed success as an effective management tool for achieving organization objectives, but recently it has been taken one step further as a tool for increasing productivity. The process of applying MBO techniques for increasing productivity in white collar workers is the same as the general process of MBO. (The general process of MBO is discussed in the chapter "MANAGING PRODUCTIVITY BY OBJECTIVES".) The next chapter will

discuss the specific techniques of managing productivity by objectives.

Managing The Blue Collar Worker

As discussed in the section, "Is the work ethic dead?", the preponderance of "baby boomers" in the work force believe a well-paying job is their birthright. They expect a "cost of living" increase in their pay each year to keep up with inflation. Few realize that their increase in pay with no proportionate increase in their productivity is the leading cause of inflation. No corporation can afford to keep increasing the pay of employees with no increase in productivity, so the expense is passed on to the consumer directly. The vicious inflation cycle is perpetuated. It is all too easy to blame unions for this vicious cycle: they are the ones who keep pushing for pay raises and added fringe benefits for their blue collar workers while promising nothing in return. The problem does not lie just with the unions, though. Management is just as guilty by not taking a harder stand in demanding improved productivity. They have not properly managed productivity.

Few organizations will admit that they are overpaying their employees and fewer employees still will admit that they are being overpaid. Once in a while, this admission will surface during a termination interview. Fringe benefits are an insidious cause for cost increases. Management will use fringe benefits as

motivators, not realizing that the more fringe benefits an employee gets, the more they expect. Time was when sick leave and paid vacations were "icing on the cake". No one would even think of taking a job which didn't offer these "mandatory" benefits today. The list of benefits to "attract" and "retain" employees has grown tremendously in recent years. A list follows which outlines some common and some "extravagant" benefits offered by some corporations. It will be interesting to look at this list ten years from now to see which items that we view as "extravagant" now, turn out to be "mandatory":

Premium payments	Medical insurance
Shift differentials	Accident/sickness ins.
Cost of living bonus	Workmen's compensation
Paid holidays	Disability insurance
Retirement plans	Old-age insurance
Social security pay	Unemployment comp.
Profit-sharing plans	Time for jury duty
Savings plans	Excused absence
Group life insurance	Wash-up time
Rest periods	Severance pay
Call-in time	Dressing time
Call-back time	Portal-to-portal time
Downtime	Wet time
Sick/maternity leave	Credit unions
Paid vacations	Parking spaces
Paid leave-military	Contest awards
Voting time	Education reimbursement
Witness time	Laundry allowance

[Source: Mali, 1978, p. 208-209]

It will be up to management to control these fringe benefits and automatic cost increases. First, however, is the task of recognizing when one is paying too much and providing too many benefits without a proportional increase in productivity. Mali outlines several "red

flags" for employers to watch for:

1. No Link Between Compensation And Work Output. As with performance appraisals for white collar workers, there is too much emphasis placed on "doing the right thing" versus "doing things right". Very few use productivity as a basis for performance appraisal and base subsequent employment decisions, such as promotions and raises, on improved productivity. As discussed above, employees no longer regard fringe benefits as "fringe"; they are now expected. Performance appraisals should reflect productivity, and pay and fringe benefits should be linked directly to this performance by way of a statement accompanying paychecks.

2. General Wage Increases Are Given Across The Board. There is certainly no sense in an organization having a merit system (which is the result of most MBO systems) if everyone gets a periodic raise no matter what their performance. The Civil Service supposedly employs a merit system, but one sees periodic step increases (and thus pay increases) which have no basis other than time in grade. The Civil Service also awards "SSP's" (Sustained Superior Performance) for employees who maintain a high level of performance, but usually no measure is made of their productivity. General wage increases usually cost the corporation so much money, it seems ludicrous to them to tack on "incentive pay" to the cost of living increase they will receive automatically.

This can have a serious impact on motivation, since those who are working "especially hard" are receiving the same increases as the "dead wood". Management must make an effort to award "improved productivity"; whatever the award, the employee must be made aware that that is what the award is specifically for. This goes back to establishing the link between compensation and productivity.

3. Benefits Are Allocated In The Same Amount To All Employees. As stated in the preceding paragraph, the "hardchargers" in an organization can experience a blow to their morale when they are given the same pay increases and "awards" as the "deadwoods". Part of the reason for this is the economics of attaining group rates for benefits. The more people who are receiving the benefits, the cheaper the rates are per person. Again, if employees see no link between their productivity and their pay and benefits, they will come to expect benefits automatically and demand more.

4. Time As The Basis For Increasing Compensation. We have already discussed the fact that the Civil Service awards pay increases for time in grade. This is certainly not peculiar to the Civil Service: "An examination of 12 labor contract agreements of organizations in Connecticut revealed that benefits are programmed for distribution at certain intervals of time

regardless of performance or productivity" (Mali, 1978, p. 210). With labor unions placing increasing emphasis on "seniority" systems, we can see the source of part of the problem. This is not to try to again place all of our productivity woes on the unions, but to keep in mind during collective bargaining to steer away from agreements which foster protection and benefits for "seniors" with no promise of increase in productivity in return.

5. Compensation Is Dispensed From Power Moves, Threats Or Legal Acts. When an employee threatens to quit unless given a raise or further benefits, with no increase in productivity, organizations should try calling their bluff instead of automatically backing down. They will be guilty of overpayment if they don't. If an impasse has been reached during labor negotiations, the employer will be faced with the threat of a strike if they don't bend to the unions desires, but they need to stick to their demands for increased productivity in return as much as is practicable.

6. The Practice Of Paternalism. Financial rewards given indiscriminately to the "family" to keep morale high do nothing for increasing productivity. An organization should strive for independent recognition base on a productivity-oriented basis.

7. Compensation "Automatically" Allocated From "Escalators." "Escalators" cause past prices to catch up

with current prices, which in turn, triggers other escalators to move ahead. Escalators have no regard for productivity and there is no correlation between escalators and motivation or productivity. Labor unions demand escalators so that they can be "equal" with other unions, but no promises of improved productivity are given in return.

8. Appraisal Systems Are Highly Subjective. Instead of using objective appraisal methods, all too often, managers fall into typical subjective appraisal traps: Appraisals based on friendships, power plays, personal factors, and "halo effects". If productivity is managed by objectives, then appraisals can be based on achievement of those objectives; at this time, financial rewards need to be linked to this achievement. Unfortunately, too many managers lack the training or the skill to carry out the entire productivity process. Some do not even know the basic concepts of productivity:

$$\text{productivity} = \frac{\text{output}}{\text{input}}$$

$$= \frac{\text{performance achievement}}{\text{resources allocated}}$$

$$= \frac{\text{actual performance}}{\text{expected performance}}$$

When productivity is written as a ratio this way, it is easy to see that when wages and benefits are increased while output or performance is at the same level, productivity drops in the same proportion. Further still,

even if performance increases, if wages and benefits are increasing faster, productivity still drops. In order for productivity to increase, performance must increase at a faster rate than wages and benefits. "In view of the inequities of pay in relation to performance and rising inflation, in the future productivity data on an individual's performance may be the only basis that will justify price increases, wage hikes, or salary adjustments" (Mali, 1978, p. 212).

Establishing Accountability In The Blue Collar Workforce

Accountability is a concept which is usually reserved for the white collar worker, since it seems to go hand-in-hand with authority and responsibility. Managers have the fact "you cannot delegate responsibility" so firmly ingrained in their minds, that they let this spill over into the areas of authority and accountability as well. Very few managers have ever considered making their employees accountable for productivity; they felt that this was an exclusive manager's function. Not until the very "lowest" employee in an organization is held personally accountable for productivity, will maximum productivity be realized in a corporation. Mali provides several suggestions for establishing accountability in organizations: (p.214)

1. Broad nebulous, and elusive goals of organizations must be replaced with definable, specific, and measurable objectives. This gives definition to expectancy!

2. Loosely assigned responsibilities assumed by departments, agencies, and organizations must give way to well-defined commitments from individuals by name and position. Job descriptions must be written so that each responsibility has a measurable evaluator to indicate effectiveness in completing the responsibility. This relates individual commitments to levels of expectancy.

3. Subjective and highly opinionated judgments must be replaced by evaluations based on measurable achievements that are agreed to by those responsible for the achievements. This incorporates evaluative measures into participative planning.

4. "pointing the finger at the other person" must be discouraged. Individuals must hold themselves accountable. Productivity must be a personal goal rather than an organizational goal imposed upon employees. The attitude that the person who plans the action, creates the action, and follows through on the action is accountable must be developed.

5. Nebulous and unrelated incentives must be replaced with "motivators" that encourage employee commitment to personal accountability. The conditions of the organization should motivate employees to honor their commitments.

From our brief discussion thus far on MBO we can see where these concepts serve as valuable tools for implementing accountability for results. We have also seen that appraisals should focus on results. The chapter on motivation discussed the broad categories of deficient appraisal practices, that is, appraisals which did not focus on results, so now is the time for introducing "Management by Objectives Appraisals' --- Appraisals that focus on results.

Evaluating Productivity In Performance Appraisals

One of the purposes of MBO is to clearly define corporation goals and objectives. MBO appraisals provide a measurement of how well the objectives were reached. The objectives are participatively set by the manager and employee, so that each employee has a clear idea before hand what is expected of them. While it is important to be able to measure a company's productivity, this is not the only purpose the MBO appraisal serves. Mali lists several other purposes: (p. 225)

1. To Justify Pay Increases. Performance appraisals provide the framework and procedure for comparing and evaluating employees' performances in levels and categories of equity for increasing wages or salaries. Acceptable performance on the job is the sole basis for compensation.

2. To Evaluate Results. Performance appraisals provide an evaluative procedure for assessing the precise and meaningful results contributed by an employee. The stress is on actual results. Important as activities may be, results are the ultimate criteria.

3. To Account For Productivity. Performance appraisals provide an evaluative procedure for review of employee accomplishments and contributions in relation to the resources consumed in the process. Accountability for productivity must link results and resources. The appraisal process evaluates both in the same context and time.

4. To Set Up Conditions For Achievement Motivation. When properly developed, performance appraisals provide the basis for motivating staff and employees to reach higher levels of performance through a plan-do-achievement cycle. Communicating in a climate of openness and participation fosters a meeting of the minds before work commences.

5. To Set Up A Feedback For Organizational Change. Performance appraisals provide feedback on how well the managerial processes are operating with the staff and what changes are required. What may

appear to be weaknesses in the individual often may be weaknesses in the organization.

6. To Develop Personnel For Positional Changes. Performance appraisals provide better data for making decisions on promotions, transfers, or demotions. It is a long-range process for planning the development of employees to occupy higher levels in the organization.

7. To Identify Employees With Hidden Potential. Performance appraisals provide a formal way to identify high-potential employees who are assigned jobs that are not utilizing their potential.

It is easy to see that MBO appraisals have distinct advantages over other appraisal methods. The most obvious advantage is the focus on productivity and MBO appraisals can link a productivity improvement with a justified compensation allocation. Since MBO appraisals stress individual accountability, this in turn provides greater control over resource allocations, and provides accountability for resources consumed. This stress on individual accountability stimulates the improvement of individual performances; individual benchmarks are formulated for each employee and evaluative measurements are made against these benchmarks. We have already discussed the importance of establishing productivity-mindedness, so we can see where MBO appraisals keep the idea of productivity in mind at all times; indeed, it provides a motivation for productivity. Going back to the ideas presented on what motivates employees, it can be seen that the participative nature of MBO appraisals, coupled with the acknowledgment of achievements, satisfy certain needs which form the basis of motivation. The

age old problem of reluctance to evaluate is decreased, since so much of its subjectivity, which was a major complaint about evaluations, has been replaced by measurable objectives.

Although it sounds as if MBO appraisals are the panacea for all management appraisal woes, they are not without their drawbacks. The most obvious drawback is that in order for MBO appraisals to be successfully administered, the manager must be skilled and competent. Suffice it to say that just because a person is a manager, this does not necessarily mean that they are competent and skillful. Training can overcome a certain amount of deficiency in this area, however. Another disadvantage is that more time and effort is required of the manager in the planning phase. Managers already complain that they do not have enough time to effectively carry out their existing duties, much less take on additional duties, so the implementation of MBO appraisals may be met with some resistance. It could be pointed out that additional time spent in the planning phase will be more than recouped in the operational phase. Lastly, MBO appraisals take out the "human" quality of appraisals; no longer are behavioral traits evaluated, and human/social considerations could be vital to an evaluation. A compromise could be made by adding those appraisal qualities and behavior aspects which are

deemed to be important.

Recall from chapter two, causes of productivity impediments, that "spiraling inflation results from giving rewards and benefits without requiring the equivalent in productivity and accountability". From what has been discussed thus far, it can be seen that MPBO and MBO appraisals address this issue. The chapter two paragraph mentioned that a viable alternative to giving rewards without requiring equivalent productivity improvement is "performance contracting". Is there a difference between performance contracting and MPBO? This question deserves further study:

Performance Contracting Versus MPBO

Once a person's job description has been established, the normal basis for compensation for the blue collar worker has been number of hours worked (versus a straight salary for white collar workers). We have seen that MPBO requires successful acquisition of predetermined goals, with the subsequent employment decisions, such as promotions, raises, etc., being linked to performance. Performance contracting takes this one step further by hiring employees to do a particular job, a specific project, or definable task. Compensation is awarded when productivity is delivered. The employee has virtually free discretion regarding time inputs, so it is in the employee's best interests to complete the job as efficiently as possible. One can see what this can do

for productivity from management's viewpoint: Time/salary is the biggest input variable in the productivity ratio. Since this input factor remains constant, awards only for productivity, the productivity factor has no where to go but up. The most common professions utilizing performance contracting today are salesmen, contractors, consultants, lawyers, teachers, and other professionals. Mali (1978) gives a comparison of time contracting and performance contracting: (p. 230)

	TimeContracting	Performance Contracting
1.	Pay for time worked	Pay for jobs completed
2.	Pay not held up if not completed	Pay held up if work not completed
3.	Continuous availability of workers	Discontinuous availability of workers
4.	Close process supervision required	Little or no process supervision required
5.	Supervisor and evaluator are one	Evaluators required
6.	Work for the organization	Work for self
7.	Projects or tasks are on-going and routine often never ending	Projects or tasks are "chunked" for each to have a start-stop cycle
8.	Work is stretched to fill the time allocated	Work is compressed to get it done
9.	Wage and salary increases are annual projects	Fee increases are negotiated based on productivity
10.	Benefits are automatically paid regardless of actual productivity	Benefits are not paid; individual arranges individualized benefits
11.	Unemployment benefits	Unemployment benefits are

	are assured	not assured
12.	Escalators are triggered on the basis of time and other indirect factors	Escalators do not exist
13.	Organization develops employees to avoid obsolescence	Individual uses "free time" to develop himself
14.	Jobbers are not required for third party intervention	Jobbers for third party intervention will add their fees
15.	Accountability centers on being at a place within a period of time	Accountability clauses can be written for a wide range of requirements
16.	Money is a weak base for motivation	Money is a strong base for motivation
17.	Idle time exists and is expensive	Idle time is eliminated
18.	All jobs can be time contracted	Not all jobs can be performance contracted

We can see that there are advantages and disadvantages to both time contracting and performance contracting. "Highly successful internal consultants in companies such as General Electric, Gulf and Western Industries, and Stanley Works are showing that performance contracting can work" (Mali, 1978, p. 231). As stated before, however, thus far, performance contracting has been limited almost exclusively to professional employees. Performance contracting will have to be introduced gradually to the blue collar work force, with a combination of performance and time contracting.

Summary

This chapter introduced the concepts of managing the motivated white collar and blue collar worker. MBO and MPBO were mentioned several times with the assumption that the reader has a basic understanding of these processes. The next chapter will delve into the specifics of these processes.

CHAPTER V

MANAGING PRODUCTIVITY BY OBJECTIVES

With the discussions of the previous chapters on motivation and management, it is easy to see that if productivity is not a deliberate aim of a corporation, then any advancements in productivity can be attributed only to luck. This chapter will tie in what has been discussed thus far with a systems approach to managing productivity by objectives. The discussion of how MBO works will include guidelines for setting productivity objectives. This will be followed by the "Do's and Don'ts for making MBO work.

How The MBO System Works

Thus far, the discussions of how the MBO system works have been limited to the gross oversimplification of management and subordinates participatively setting objectives and periodically reviewing progress towards achieving those objectives. MPBO, which until now has been used almost interchangeably with MBO, can be more specifically defined now as an adaptation of MBO. Ross defined the classic MBO process as having four basic steps, which he called the "Performance improvement cycle": (p. 85)

1. Define the job. Specification of the key responsibilities and duties for which the individual is held accountable.

2. Define expected results (objectives). The performance conditions (expressed in measurable, verifiable terms) that exist when the job is performed satisfactorily.

3. Measure the results. Comparison of the actual results achieved against the established objective.

4. Appraisal. The process of providing feedback on results and establishing the necessary modification to the job or the objectives in order to set expected results for the next performance period.

We will see how Mali (1978) has taken this basic MBO process and expanded it to focus specifically on productivity:

1. Identify Potential Areas For Productivity Improvement. Instead of merely defining the job, this stage has been taken one step further by specifically focusing on those aspects of the job which have the potential for productivity improvement. A common example occurring in the construction industry is the construction of formwork. Perhaps more potential savings exist in the formwork phase of construction than any other area. Due to poor design and construction, many manhours and much material is wasted. This then, would be a prime area for focusing attention for productivity improvement. Once the area is defined, there are five aspects of that area which should be considered:

(a) Operations. Areas that should be examined are those which take unreasonable amounts of time

or require excessive manpower, such as large numbers of employees performing similar or repetitive work. Also, work which is not well defined, leaving too much discretion to someone not having the expertise to make those kind of decisions.

(b) Responsibilities. This goes hand in hand with accountability. Sometimes, there can be declining productivity in the form of increased unit costs or expanding backlogs because of having no distinct individual responsible for a certain part. Usually, responsibilities are outlined in position descriptions, but this can lull the individual into thinking that there may be "overlap" of their responsibilities with someone else's. Formal, posted lists of responsibilities are helpful.

(c) Problems. A problem can be looked at as a "glitch" in the work system. Either the system has antiproductivity barriers, or outside factors are influencing inside factors to a critical degree.

(d) Tradition. "We have always done it this way" is one of the most insidious attitude barriers to productivity improvement. Resistance to change is a very common human trait which

takes a conscious effort to overcome. Innovations cannot take place until people are willing to let go of the things they are familiar with.

(e) Opportunities. This directly follows the concept of clinging to tradition. Lack of familiarity may block opportunity.

This is the step which should be given the most time and consideration; it has the potential for the biggest payoff later on.

2. Quantify Productivity Level Desired. The potential areas for productivity improvement outlined in step one form the basis for the measurement of productivity. The prevailing levels of performance, along with the current usage of resources are examined, and from this, a productivity ratio is established. (OUTPUT/INPUT) The manager now determines the desired productivity ratio, estimating what the new input and output levels should be. It is not intended for these projections to be accurate; it is only a guide. We now have "before and after" productivity indexes. It is extremely important at this point to be able to express objectives clearly, although accuracy is not critical. All too often, managers use vague expressions such as "generate more business" or "reduce costs" or "do a better job of design". These are not acceptable as they are not measurable. The usual values measured for productivity

are quantity, quality, time, or dollar value. Ross gives an example of this measurement: (p. 88)

Yardstick	Illustration
Quantity	Sell a sales quota of six hundred. Produce two units per direct labor hour.
Quality	Improve the technical specifications. Reduction of errors.
Time	Complete the project in six months. Reduce overhead by May 15.
Dollar value	Develop a training program at a cost of $25.00 per person. Achieve a return on investment of ten percent.

Ross notes that the illustration for quality is not to be confused with a qualitative objective that cannot be stated in quantitative terms. For example, "recommend a formal training program for new sales personnel" or "prepare new plant layout." He also notes that for the illustration for time, the completion date should normally be within twelve months following the writing of the objective.

Ross gives seven questions to ask for developing a criteria of acceptance for objectives:

(a) Does the objective measure results and not activities?

(b) Is it a stretch objective?

(c) Is it realistic in terms of attainment?

(d) Is it suitable? Does it support the objective of the next level in the organization?

(e) Is it measurable and verifiable?

(f) Is feedback built-in or can it be provided?

(g) Is it acceptable to the individual (or yourself if it is your objective)?

Mali gives an example of the setting of productivity objectives for a major function of a private firm with its respective Evaluative Productivity Measure: (p. 113)

Example: Productivity Objectives for the Production Function

(a) Hold plant operating costs to $4 per 10 unit lots while reducing production force to 375.

$$EPM = \frac{\$24 \text{ million total costs}}{375}$$

(b) Complete construction of 5000 square feet, two story approved addition to existing plant within cost of $125,000 by March 1.

$$EPM = \frac{\$125{,}000 \text{ cost of addition}}{28 \text{ weeks}}$$

(c) Reduce cost of pump and engine repairs from $10,000 to $5,000 per year per mechanic.

$$EPM = \frac{\$50{,}000 \text{ cost of repairs}}{10 \text{ mechanics}}$$

(d) Maintain a once-a-day contact with all subordinates at their work stations.

$$EPM = \frac{\text{total number of no-contacts reported}}{40 \text{ subordinates at stations}}$$

(e) Improve morale in the work force through better union relations.

$$EPM = \frac{\text{total number of written grievances this year}}{\text{total number of written grievances last year}}$$

(f) Master 10 techniques in work simplification for 30 supervisors in a 2-week training period.

$$EPM = \frac{10 \text{ techniques X } 30 \text{ supervisors}}{2 \text{ weeks}}$$

(g) Achieve a delivery of 16 units per day for less than $45 unit cost to shipping point B.

$$EPM = \frac{\$45 \text{ cost} \times \text{number of units}}{16 \text{ units} \times 360 \text{ days}}$$

(h) Complete by next year a vendor-quality rating system to maintain price, delivery, and reliability at or below an index established for the past 5-year record.

$$EPM = \frac{\text{number of unsatisfactory incidents}}{\text{5-year index of 3 items}}$$

(i) Reduce master schedule slippage from 3 weeks to 2 weeks within the next four operating quarters.

$$EPM = \frac{\text{2 weeks slippage}}{\text{3 weeks present slippage}}$$

3. Specify A Measurable Productivity Improvement Objective. The new productivity index is the basis for establishing the new productivity objective. This objective should be formally stated, written down, and should be committed to by the entire group involved. In classical management techniques, the "top-down" approach has been utilized, where managers make the decisions and pass then down to the subordinates. Here, a "bottom-up" approach proves to be more effective, since those who will actually be doing the work come up with the suggestions for productivity improvement; we have seen in the chapter on motivation that people are more committed to their own ideas. It is extremely important to have management's commitment and support. The immediate supervisor must participate in the setting of the objective and must agree to it. It is the manager's

responsibility to ascertain whether the objective is realistic, that is, whether it can be achieved with available resources, or resources which could be available; whether it is based on a reasonable schedule, and if it is designed to achieve the results needed by the firm. At this point, accountability is assigned, and the supervisor must agree to the level and scope of accountability assigned. It is extremely important to insure that there is a complete understanding between the manager and the subordinate regarding job responsibilities. Studies conducted by the American Management Association conclude that millions of people are not clear about what they are expected to do (Ross, 1977). "Vague understanding of job definition is generally attributable to: (1) job descriptions that are stated in general rather than specific terms; (2) job descriptions that are "programmed" to such an extent that no flexibility in job definition is permitted; and (3) the total lack of any job description accompanied in turn by unclear authority delegation or confusion in assignment of responsibility" (Ross, 1977, p. 87). Employees should be made to write down their duties as they understand them, so that any confusion can be cleared at this point. Another interesting phenomenon to examine when discussing responsibility is the "80/20" rule, known as Pareto's Law, which says that 80% of the work is accomplished by 20% of the people. This is not

applied solely to employees; However, it can be applied to other aspects of an organization. For instance, 20% of the activities could account for 80% of the results, and so on. Management should keep this phenomenon in mind when delegating responsibility.

All too often, managers try to hide behind the excuse that "it can not be measured". This complaint can be most often heard from "creative" type jobs, such as design engineers. They will want to know how you measure creativity. Some managers have attempted to get around this question by stressing cost control, but far more important is the measure of effectiveness, as it puts the emphasis on results. Further still, Ross poses these two questions to answer the question of measuring productivity: "What have you contributed to the knowledge and the results in your department and to the company in the past year?" and "How many answers to design problems have you come up with during the past year?" (Ross, 1975, p. 91) These questions can give the design engineer a focus on their productivity, while giving the manager a means of distinguishing between the most creative and least creative individual in the department. As it becomes more difficult to secure absolute measures of quantity, quality, time, and dollar value, it may become necessary to come up with some measure of present level of results in order to be able to estimate changes from that level. Ross describes

three measures, in descending order of desirability:

(a) The Index. This compares performance against some baseline level and can be expressed as a ratio, a percent, a fraction, or a batting average. Illustrations are: ratio of power cost to maintenance costs or percent of service calls.

(b) The Scale. This can be constructed to measure performance over time. It may be "on a scale of one to ten" or something less descriptive such as "better than-worse than" or "excellent-fair-poor".

(c) The Description. This is the least useful measure but is better than none at all for setting base lines for estimating expected results. "Better than the industry average" is different from "worse than the industry average" but the description can be used as an imperfect measure to state conditions as they should be and as they exist.

4. Develop Plans For Attaining The Objective. Studies should be made of viable alternatives for achieving the stated objective and the best plan should be selected. Time to achieve objectives is a very important consideration, and contingency plans should also be formulated. This is probably the most challenging step in the MPBO process, as it requires a high degree of competence to come up with the most feasible coordination of the limited resources of time, skill, effort, and money.

5. Control With Milestones Of Progress Toward Objectives. The activities and tasks established in step four are set to a schedule in order to measure and report on the status of progress made towards achieving the objectives. When the line on the schedule begins to deviate from the milestone, corrective action needs to be taken.

6. Evaluate Productivity Reached. This is similar to the MBO step of measuring the results. Not only does this step rate how well the results have been achieved, but it ensures that management is keeping up with the MPBO process. Results of the evaluation provide feedback to both the manager and the subordinate. The productivity index (PI) will be introduced here briefly, but will be explained more fully in the next chapter on Productivity Ratios & Measurement.

Mali (1978) gives an example of how the MPBO strategy can be practiced: (p. 121)

SUPERVISOR

Step 1. Identify productivity area

(a) Responsibility. Welding production.

(b) Performance. Weld 40 plates, 50 assemblies weekly. No more than two plate rejects (5%).

(c) Resources. Two men, welding machine, 40 hours per week.

Step 2. Quantify Productivity

(a) Before:

$$PI = \frac{\text{40 Plates}}{\text{2 men}} = \frac{\text{20 Plates}}{\text{man}}$$

$$PI = \frac{\text{2 rejects}}{\text{40 plates}} = .05 \text{ reject (5\%)}$$

(b) After:

$$PI = \frac{\text{60 plates}}{\text{2 men}} = \frac{\text{30 plates}}{\text{man}}$$

$$PI = \frac{\text{2 rejects}}{\text{60 plates}} = .03 \text{ reject (3\%) rate}$$

Step 3. Specify Productivity Objective. Achieve 60 plate welding results weekly.

$$\frac{\text{(30 plates)}}{\text{(man)}}$$

with no more than two plate rejects (3%) by January 1.

Step 4. Develop A Plan. Install new semiautomatic welding machine and provide 80 hours training for welders.

Step 5. Control with Milestones of Progress

July	September	January
40 plates/man	50 plates/man	60 plates/man

Step 6. Evaluate productivity. By January 1, 60 plates are welded in 40 hours. (50% productivity improvement) while maintaining a two-plate reject rate (40% quality improvement).

We have seen how to use MPBO as a central method of achieving productivity and how the productivity index provides a measurement format for creating this management system. We can see that each link in the process is a synergistic contribution to the management of the entire organization. There are some managers who may look at the above outline and consider it a "cookbook

method" towards management, rather than as a philosophy of management. "The Do's and Don'ts" of MBO to follow will merely serve as a list to hasten the failure of an MPBO system when viewed only as a technique. To those who view it as a philosophy, however, it will provide suggestions along with "red flags" to watch out for.

The Do's And Don'ts Of MBO

[Source: Ross, 1978]

The Do's Of MBO

Do Design Stretch Objectives. Ever since the advent of the scientific method of management, the tendency has been for jobs to become more and more specialized. Per unit cost of production declines as specialization increases, but only to a point. With increased specialization comes emotional reactions to tedious, boring and monotonous jobs. Excessive specialization of labor eventually drives up unit costs. The point at which behavioral problems drive up this cost of production is called the boredom and alienation barrier. (Kreitner, 1983) It is important for the job to be able to "grow", either horizontally or vertically.

Do Be Flexible. As situations change, so must the plans, but flexibility in thinking extends beyond this. There are two general patterns of thinking: vertical and lateral, with neither being superior to the other, and each being complementary to the other. Vertical thinking starts at one point and works systematically in one

direction at a time. An example of this is Thomas Edison's search for an incandescent lamp filament. This type of thinking is predominant in Western industrialized countries because of the predominance of logical analysis and linear thinking. Many people can get trapped into thinking vertically, however. They must decide which lines of thought are worth persistent exploration and which are not. Lateral thinking, on the other hand, starts at one or several points and moves out in many directions at one time. This enables one to see things in unconventional ways, allowing for a good deal of creativity to take place. It is important to see how both of these ways of thinking are needed: vertical thinking for adherence to productive conventional ideas and lateral thinking for radical, new ideas. (Kreitner, 1983)

Do Provide Top Management Support. MBO helps managers at all levels contribute to a comprehensive system of management based on measurable objectives, but a manager at any level with a "do as I say, not as I do" attitude will guarantee the failure of MBO. It is particularly important for top level management to have a very strong commitment to MBO, lest it be viewed by subordinates as another personnel gimmick which wastes everyone's time. It must be stressed that top level support does not necessarily mean top level authority. Part of the purpose of MBO is to delegate authority to

lower level managers. Conversely, lower level managers must be willing to accept that authority.

Do Provide Feedback. This is a crucial step in the MBO cycle. Face-to-face meetings between superior and subordinate at three-, six-, and nine-month intervals are recommended, vice a formal chart of accounts or an incomprehensible reporting system. Not only does this give an accounting of the progress toward objectives, it permits those responsible for a certain set of objectives to reconsider them to see if they are still valid. This is also a good opportunity for the supervisor to give subordinates needed and appreciated feedback. (Kreitner, 1983)

Do Tie To Compensation. We have already discussed the subject of money as a motivator, and have found that money in itself is not a motivator, but that money as a form of recognition for a job well done increases that person's satisfaction and thus increases motivation. This tie to compensation is extremely important. Too many times, merit systems end up giving automatic pay increases due to time in grade or cost of living increases. Managers must go the extra yard to recognize and reward the outstanding individual.

Do Follow Up With Plans. We have discussed how to follow up objectives with action plans. It must be stressed that no matter how good the objectives are, if a plan is not carefully thought out, there will be a lack

of the necessary organization of effort.

Do Stress Objectives and Not The System. This can be one of the biggest pitfalls of MBO. Although it is important for everyone to understand the system, the whole point of the system is stressing the objectives.

Do Tie to Appraisal. Closely related to compensation, appraisal does the most good when the employee realizes a direct cause and effect relationship between their performance and their evaluation.

Do Train. Training the new employee and manager is good, but just as one cannot read the Bible once and be set for life, one cannot be introduced to MBO and be expected to carry out its principles flawlessly with no refresher training. It is important that every employee be "pumped up" periodically.

Do Integrate and Coordinate. Closely related to following up with plans, it is important to ensure that subsystems of the organization are not working at cross purposes. For instance, MBO should support the profit plan as well as the functional plans in marketing, personnel, production, engineering and so on.

The Don'ts Of MBO

Don't Create a Papermill. As the MBO system is being introduced to employees, each is probably making a personal calculation of what the new systems entails in the category of additional paperwork. Although MBO procedures should be documented, there should be a

certain amount of discretion involved to discern when too much effort is being place on the system (paperwork) rather than the objectives.

Don't Emphasize Techniques. Again, any of the MBO techniques, if emphasized to the detriment of the objectives, becomes counterproductive.

Don't Adopt the "Busy" Syndrome. A red flag should go up when one sees a manager scheduling a time for getting results and another time for "MBO". Typically, this manager has a problem delegating, and is placing more importance on activities than on results.

Don't Be a Copycat. What works magnificently for one organization may be a complete failure in another. Although it may be beneficial to learn from someone else's mistakes, their exact technique cannot be copied. Each situation requires a unique system.

Don't Implement Overnight. It is a good practice to start MBO at the top of an organization and introduce a new layer of management to the MBO process each year. Attempting to plunge several layers of management into MBO all at once can lead to confusion, dissatisfaction and failure. Five years is an average amount of time for a moderate-sized organization to evolve a full-blown MBO system. (Kreitner, 1983)

Don't "Lay On" Objectives. Again, objectives should be set participatively; any attempts to "assign" objectives will kill motivation. The manager must take

the time to discuss the objectives and get commitment.

Don't Consider MBO As A Panacea. MBO is not a magical system which will take care of itself. It requires highly skilled and committed managers to make it work. "MBO is only as good as the management system it is built upon. This is the System for Productivity Management" (Ross, 1978).

CHAPTER VI

MEASURING PRODUCTIVITY

Now that we have seen how MPBO works, the true test of assessing our success with MPBO arises: measurement. This chapter will examine several aspects of measurement. First, what makes measurement difficult, then the value of quantifying work expectations, and lastly, measurement techniques that can be used to design an evaluation system for assessing the level of productivity achieved.

What Makes Productivity Measurement Difficult

Although it seems that measuring productivity would be a natural thing for organizations to do, very few actually make a practice of it. Mali examined several reasons for this:

1. Work Processes Are Complex And Unwieldy. Any attempt at measurement requires a great deal of simplification and assumption. Productivity is defined as the amount of goods and services produced by a productive factor in a unit of time, but measurement is not as simple as merely stating output per manhour. Known inputs go through a conversion process which can be very complex. It can be influenced by government regulations, weather, unions, economic conditions and internal environmental components. When we attempt to

measure, we assume a closed system with all of the conversion factors being held constant. Any productivity change cannot be explained by looking at this simplified productivity index. Drewin also poses the work-time model as a further clue for change in efficiency: The basic work content "A" is the minimum required time to complete the operation if working conditions are perfect, design and specifications at an optimum, and if there is no time loss. This is an idealized condition that may never occur. The basic work content is increased by work content "B", that is, unavoidable externalities such as weather, suppliers, and so on. Work content "C" is added by poor designs, inadequate specifications, lack of standardization, government overregulations, excessive material and quality requirements. Work content "D" is added by inefficient methods, obsolete equipment, poor layout and so on. Work content "E" is ineffective time due to management's shortcomings, design changes, lack of equipment, lack of men, lack of materials and poor working conditions. Work content "F" is ineffective time due to shortcomings of workers, absence, lateness, idleness, careless workmanship and accidents.

2. Measurements Are Made After Work Is In Process. This is almost like closing the barn door after the horse has left. Measures for work processes should be built in before the processes are implemented, for if it is discovered that the productivity cannot be measured after

the work is in progress, the whole process may have to be revised. This is what is known as "Management by Exception".

3. Generalized Terms Inhibit The Use Of Evaluative Measures. We have already discussed staying away from such vague terms as streamline, economic, quality, growth, service, morale, attitude, timely, and so on, when defining productivity measures. These words can imply a variety of meanings, making the assignment of quantitative measures difficult or impossible. Whenever a general term needs to be used, it should always be accompanied or modified by terms such as percentages, ratios, averages, index numbers, time units, cost units, degrees, and so on.

4. Measurements Have Been Activity Oriented Rather than output oriented. We have referred many times thus far to the fallacy of emphasizing the means rather than the end, and this especially holds true for measurements. The result is the "activity trap": conducting activities for the sake of activities. A conscious effort must be made to define the work process in terms of what the organization is trying to achieve rather than the activities it can conduct.

5. Measurements Are Used At The Macrolevel Of Economy. What this means is that too often, what is perceived as the total input is compared with what is perceived as the total output to obtain the total productivity; That is,

measurements are made which look at the total plant (macro) rather than examining each portion of production on a microscopic level. This goes back to the first problem with measuring productivity: oversimplification. Measurements are needed which evaluate the productivity processes within small areas of the organization.

The Value Of Quantifying Work Expectations

Mali gives the following advantages to quantifying productivity change in work expectations:

1. Quantified work expectations define and clarify the elements of expected results better than any verbal description. They provide a better configuration of what is expected. "To improve morale" is a generalization, but "to improve morale by reducing monthly grievance rate from 10 to 5" is a quantified target and a specific way to evaluate it.

2. Quantified work expectations build in measures of effectiveness and efficiency. The process of evaluating progress toward an end result is difficult, if not impossible, with qualitative statements. Using an evaluative measure to describe a future result provides a way of evaluating the current activities that will make it happen. Management can see the relationships among data, resources, and skills needed to deal with specific situations. The reduction of the grievance rate from 10 to 5 to improve morale suggests the relationship among several skills and activities, such as handling people, knowing the labor contract, and being able to "nip trouble in the bud."

3. Quantified work expectations can be enlarged or reduced for progressive performance stretches. This is hardly possible with generalizations. To improve morale by reducing the grievance rate from 10 to 5 for the first year implies a second year effort to reduce the rate from 5 to 3. Reducing costs 10 percent for the first year suggests a progressive reduction for subsequent years. Quantitative techniques give work statements an intrinsic manipulative value--what is, results can be manipulated both to direction and the speed at

which they are achieved.

4. Quantitative work expectations offer a means of keeping unknowns and uncertainties at a given level; the quantitative feature helps us see the effects the results will have on other areas. To reduce the grievance rate from 10 to 5 implies the need for a sharper and better level of supervision. If training is necessary, how much will it cost? Implications derived from quantitative statements tend to make unknowns more knowable.

We see the importance of quantified work expectations, but what about those areas of work which cannot be quantified? We have already discussed the fact that blue collar jobs tend to be easily quantified and that white collar, "creative" jobs need to be qualified. Thus, when measuring total productivity, there needs to be a combination of both quality and quantity assessments.

Productivity Measurement Techniques

Thus far, we have briefly introduced the productivity index as a ratio which sets the basis of evaluating productivity. We have compared simple ratios such as dollars over dollars, and labor over labor, and we have combined several such parameters to compare net output with several inputs. Just as the financial ratios of an organization are subject to selective interpretation, productivity ratios can be equally suspect. "Practice, comparative use, and historic validation are methods for giving productivity ratios meaning and validity" (Mali, 1978, p. 83). Mali recommends using several partial ratios as a group to show the

comparisons of how resources are being utilized within an organization and between organizations of comparable size:

1. Use several ratios that have historic validity for the organization.
2. Build in ratio measures while the work processes for productivity are being designed, planned, and developed.
3. Change general terms to quantified expressions that tell how much and what is needed.
4. Focus the ratio toward the output of the process rather than its activities.
5. Select ratios that are useful at the firm level rather than at the macrolevel of the economy.

Mali suggests that the ratios representing productivity can be grouped into five categories: (1) overall indexes---measures of the final outputs of the entire organization related to the resource inputs, (2) objectives ratios---measures of the achievements of individual managers or departments at the end of a schedule related to the objectives that were planned at the beginning of the schedule, (3) cost ratios---measures of performance output related to corresponding costs, (4) work standards---measures of work units or work packages achieved by individual work centers or departments related to expected or normal standards practiced in other organizations, (5) time standards ratios--measures of performance output related to needed time. The output variables reflect results, performance, and effectiveness and can include revenues, products sold, programs

completed, deliveries made, services rendered, and so on. The input variables reflect resources and efficiency and can include costs, personnel, time, rent, equipment, payroll and so on.

We have seen examples of these productivity indexes in previous chapters. The techniques outlined above represent a broad overview of productivity measurement. This idea can be expanded much further with the concept of productivity audits. Productivity auditing is a comprehensive procedure, not unlike traditional audit practices which monitors and evaluates organizational practices to determine whether functional units, programs, and the organization itself are utilizing their resources effectively and efficiently to accomplish objectives. Where this is not being achieved, productivity auditing recommends necessary action to correct and adjust shortcomings, poor results, and system deficiencies. (Mali, 1978)

The purpose of any productivity measurement is quite simple: productivity must be measured before it can be improved.

CHAPTER VII

DISCRIMINATION IN MBO SYSTEMS

MBO and MPBO are strategies used by many managers to coordinate human effort while minimizing friction and duplication of work in order to achive the organization's goals and purpose. We have discussed the fact that MBO systems are merit systems, that is, a system which makes employment decisions such as promotions, raises or dismissals based on the employee's performance, or in the case of MPBO, on the employee's productivity. MBO is gaining popularity because its emphasis is on objectives that are both measurable and participatively set. It is also considered progressive since its premise is MacGregor's Theory Y philosophy, which was discussed in the chapter on employee motivation. One aspect of MBO which receives very little attention, however, is its potential as a vehicle for discrimination as defined by statute. This subject was not touched upon in any of the books and articles on productivity read by this researcher. The ramifications of a discrimination lawsuit against a corporation go far beyond the immediate implications, such as time and money lost. The ultimate loss in productivity resulting from lower morale, for instance, while difficult to measure, is none the less, very real. It is for this reason that

the manager must have a thorough understanding of the potential for discrimination in MBO systems, and realize their responsibility and liability.

Since this subject was not discussed in any of the productivity articles which were read by this researcher, the discussion to follow relies heavily on case law and management articles which do not refer to the construction industry in particular, but one should be able to see the applicability.

MBO As A Potential Vehicle For Discrimination

The December, 1980 issue of Management Review says "today, MBO is being used as an exploitive, manipulative management control mechanism as often as a liberating, humanistic philosophy of management" (Kreitner, 1983, p. 154). When that exploitation takes the form of discrimination, any practical uses of MBO become quickly overshadowed by its illegality. "MBO processes raise risks of both intentional and unintentional employment discrimination. Even where they are uniformly applied, MBO processes can still incorporate unintentional discrimination due to the disparate impact of the processes on persons of different races, sexes, or national origins" (Gruner, 1983, p. 364).

Title VII of the Civil Rights Act of 1964 and the Equal Pay Act of 1963 outline the federal restrictions on employment discrimination. Since merit systems, in general, are a step ahead of other systems which are

extremely subjective in employment decisions, special provisions have been made for them to get around the strict wording of the Civil Rights Act and Equal Pay Act. For instance, there would be no point to a merit system, in regards to the Equal Pay Act, if all people were paid the same wage for the same work. The special provision for merit systems is that different wages are allowed "where such differences arise pursuant to (I) a seniority system, (II) a merit system, (III) a system which measures earnings by the quantity or quality of production, or (IV) a differential based on any other factor other than sex. The only problem is proving that one falls into one of these categories. The burden of proof, or course, is on the employer.

One illustrative and precedent setting case is Corning Glass Works v. Brennan (US Sct, 1974). In this case, the burden of proof was on Corning Glass Works to prove that the higher base wage paid for night inspection work, until 1966 performed solely by men, was in fact intended to serve as compensation for night work and did not constitute an added payment based upon sex. Corning attempted to remedy their situation (and thus avoid charges of violation of the Equal Pay Act) by opening up night shift jobs for women who, on an equal seniority basis with men, were able to bid for the higher paid night inspection jobs as vacancies occurred. On January 20, 1969, a new "job evaluation" system for setting wage

rates took effect, under which all subsequently hired inspectors were to receive the same base wage (which was higher than the previous night shift rate) regardless of sex or shift. Employees hired before that date, however, when working night shift, were to continue to receive a higher ("red circle") rate, thus perpetuating the previous differential in base pay between day and night inspectors. The Secretary of Labor brought these actions for backpay and injunctive relief against Corning, claiming that violations of the Equal Pay Act of 1963 had occurred at two of its plants. At one plant, the District Court granted relief, and the Court of Appeals for the Second Circuit affirmed, concluding that Corning's practice violated the Act, while at the second plant, the District Court held that the Act had not been violated, and the Court of Appeals for the Third Circuit affirmed. (Corning Glass Works v. Brennan)

Some more background information is worth looking into at this point. Prior to 1925, Corning operated its plants in Wellsboro and Corning only during the day, and all inspection work was performed by women. Between 1925 and 1930, the company began to introduce automatic production equipment which made it desirable to institute a night shift. During this period, however, both New York and Pennsylvania law prohibited women from working at night. As a result, in order to fill inspector positions on the new night shift, the company had to

recruit male employees from among its male dayworkers. The male employees so transferred demanded and received wages substantially higher than those paid to women inspectors engaged on the two day shifts. There is some evidence in the record that additional compensation was necessary because the men viewed inspection jobs as "demeaning" and as "women's work". During this same period however, no plant-wide shift differential existed and male employees working at night, other than inspectors, received the same wages as their day shift counterparts. Thus, a situation developed where the night inspectors were all male, the day inspectors all female, and the male inspectors received significantly higher wages.

In an effort to keep everyone happy and attempt to avoid a violation of the Equal Pay Act, all Corning did, essentially, was give everyone a raise while continuing to perpetuate the differential in base wages between day and night inspectors. Corning argued that they did not violate the Act because day shift work is not performed under similar working conditions as night shift work. The fact of the matter is that the concept of "working conditions" as used in the specialized language of job evaluation systems, simply does not encompass shift differentials. Thus, trying to prove that one falls into one of the categories of exceptions is not as easy as it may seem, and trying to keep everyone happy through

collective bargaining does not shield one from the law.

Title VII also contains special provisions concerning discrimination in merit systems: It shall be an unlawful employment practice for an employer to apply different standards of compensation, or different terms, conditions, or privileges of employment pursuant to a bona fide seniority or merit system provided that such differences are not the result of an intention to discriminate because of race, color, religion, sex, or national origin and it shall not be an unlawful employment practice under Title VII for any employer to differentiate upon the basis of sex in determining the amount of the wages or compensation paid to employees of such employer if such differentiation is authorized by the provisions of the Equal Pay Act. (Gruner, 1983)

In determining the legitimacy of a merit system, two questions must be answered: (1) Is the system bona fide and (2) is it the result of an intention to discriminate? The key to a bona fide seniority system has continued to be the four factors from Teamsters v. U.S. Cited in later cases, they are: (1) Whether the system discourages all employees equally in transferring between seniority systems; (2) whether seniority units are separate bargaining units and whether the structure is rational and conforms to industry practice; (3) whether the system had its genesis in racial discrimination; and (4) whether it was negotiated and is maintained for illegal purposes.

(Hart, 1984)

Robinson v. Lorillard Corporation is a representative case of a merit system which was the result of intentional discrimination. Lorillard opened its tobacco production plant in 1956 at which time Negroes were hired only for the blending, cutting, service and shipping and receiving departments. White persons were hired for the regular making, filter making, packing, maintenance and expert departments. The departments to which black employees were assigned were generally less desirable in that the pay was lower and the jobs less challenging. The filter making department and the packing department were the largest departments and the departments presenting the most rapid promotional opportunities. The maintenance department had generally the highest paying jobs in the plant, while the relatively low paying jobs were predominantly in the service, blending, cutting and shipping and receiving departments. Lorillard's discriminatory hiring policy continued until the summer of 1962. in 1962, employees were allowed to transfer to previously racially segregated jobs, but employees who transferred were required to forfeit their accumulated seniority in the department they transferred from. In addition, they began as new employees in the department they transferred to. Up until 1970, departmental seniority still governed promotions to better jobs, the filling of temporary

vacancies, the right to be recalled from layoff, and the right to resist cutbacks and layoffs. The departmental seniority system, in conjunction with Lorillard's initial discriminatory hiring policy, had the following continuing racially discriminatory effects: [Source: Robinson v. Lorillard]

(a) Negro employees hired into the blending, cutting, service and shipping and receiving departments because of their race were making substantially less money than white employees hired into the other departments during the same period.

(b) The white employees hired into white departments during the period when blacks were excluded, and who were still in their departments of hire, had more seniority than any of the negroes who had transferred to a white department. Therefore, even though many of the negroes had been longer employed by Lorillard, they were more vulnerable to being cut back to lower paying jobs or being laid off than the white employees.

(c) Transfers between departments had been... discouraged. For example, a conditioner operator in the blending department (formerly black department)...earning $3.25 per hour would have to take a 20% pay cut if he transferred to the filter making department (formerly white department), where the entry level job (paid) $2.58 per hour.

Because of these practices, the Court found Lorillard guilty of violation of the Civil Rights Act: "Defendants have intentionally engaged in and (were) intentionally engaging in the unlawful employment practices (described above)...None of the unlawful employment practices...above...results from a bona fide seniority or merit system within the meaning of ss 703(h)

of the Civil Right Act of 1964, 42 U.S.C. ss 2000e-2(h), but rather each such practice is the result of a seniority system that discriminates against negro employees hired into the blending, cutting, service and shipping and receiving departments because of their race" (Robinson v. Lorillard).

The prevention of discrimination in an MBO merit system depends in part on the nature of system participants. A bona fide MBO system must apply on a neutral basis to all employees performing the same work.

One case which set a precedent in this regard was EEOC v. Aetna Insurance Company. In this case, a woman who had six years of experience in the insurance industry, most of which was in the underwriting area, was hired by Aetna as a commercial underwriter at an annual salary of $7000.00. Aetna credited her with 2 year, 6 months experience. Three years later, they hired a man who had 15 years underwriting experience, for which Aetna credited him for 4 years, at a salary of $11,000.00. By this time, the woman was making $8,000.00. They performed the identical job, working side by side. The man was subsequently fired for poor performance at which time the woman discovered that he had been receiving a salary substantially higher than hers.

When the Department of Labor undertook an investigation, Aetna voluntarily gave the woman a retroactive pay increase. They then hired a replacement

for the man, another man who had 8 years underwriting experience, and started him at an annual salary of $14,700.00. By this time, the woman was earning $13,000.00. They were both still performing identical jobs, and after one year, the man was promoted and his salary was increased to $16,300.00. The Secretary contended that the salary differential was based upon sex discrimination in violation of the Equal Pay Act. Following a lengthy trial, the lower court, after a careful examination and comparison of the duties and responsibilities of both the woman and the man, held that the Secretary had established a prima facie case of sex discrimination by showing that the work performed by the woman was substantially equal to that performed by the man, that their respective duties required substantially equal skill, effort, and responsibility, that they worked under similar working conditions and that the man was paid a higher salary than the woman. (EEOC v. Aetna)

Aetna rebutted the Secretary's prima facie evidence by saying that their actions were justified by one of the four statutory exemptions. In the end, Aetna proved that the differential came within the merit system exemption of the Civil Rights Act, butit also came out that Aetna practiced two different merit systems: One for incoming employees and one for existing employees. The system for incoming employees placed them according to their "merit", while the system for existing employees utilized

MBO, giving promotions, raises, etcetera, after periodic assessments of goal achievements. Although this sounds somewhat fishy, Aetna still came out of this smelling like a (fishy) rose, because two of the exceptions were brought into operation: (i) a merit system and (ii) a differential based on any other factor other than sex.

Aetna got away with utilizing two separate merit systems, because their procedures for setting performance merit standards and assessing employee performance were sex-blind. This is an area which has a high potential for discrimination. Merit standards and procedures should be defined in writing prior to the performance to be measured with them in order to preclude after-the-fact claims of discrimination. Merit evaluations should also be in writing, along with the employees objections, if any. If there are objections, both the written evaluations and objections should be automatically reviewed by the evaluator's superiors.

One case which emphasized this is Frink v. U.S. Navy. Frink is a black architect who was denied promotion by the U.S. Navy to one of four higher paying vacant naval architect's positions. Frink's supervisor had given him a low appraisal which Frink considered unreasonable and unfair. There was, however, no direct evidence that the supervisor's low appraisal of Frink was racially discriminatory, and Frink himself offered an explanation for this appraisal, which was that the

supervisor rated him on the basis of potential rather than past performance.

The fact that the Navy used a white supervisor to rate a black employee for an application evaluation is not racially discriminatory, because the Navy used two supervisory appraisals of applicants and they were reviewed by a rating panel. Also, detailed written instructions were provided to a supervisor, and applicants were rated on specifically described attributes, rather than on vague, general standards. Job vacancies were posted along with qualifications to fill each vacancy, plus there was a black member on the rating panel and procedures had been established for reviewing allegedly discriminatory actions. Although it was later decided that the supervisor had rated Frink unfairly by evaluating his potential rather than his past performance against established standards, the court decided that there was no direct evidence that this evaluation was motivated by racial discrimination.

Merit standards should measure the degree to which employee's actual or potential job performance furthers their employer's business interests. Discrepancies remain, however, concerning how closely related business interests and standards must be. Often, in order for a system to be considered bona fide, certain test validation measures must be met. These standards are discussed in the case Association Against Discrimination

v. City of Bridgeport:

The process of selecting firefighters had included a written examination since tests were first instituted in 1936. Since this time, only two minority firefighters had been hired. This along with the fact that the city had recently been sued for employment discrimination in the police department, and realizing the impending applicability of Title VII to municipalities, led Bridgeport to become one of eleven Connecticut cities which hired consulting firms to develop new exams. These newly designed exams were first administered in 1975. A minimum score of at least the seventy-fifth percentile of those taking the exam was required for candidates. Other requirements included the following:

1) Pass medical and physical agility tests
2) Age 18 or older
3) High school graduate or equivalency certificate
4) Resident for a least one year prior to the written exam
5) Valid Connecticut driver's license

Of the 661 white candidates, 184 or 27.8% passed. Of the 110 minority candidates, 8 or 7.3% passed. The plaintiffs alleged that the city engaged in a "policy and practice of discrimination on the basis of race, color, and/or national origin against minority group members" and that minority group members "are currently being denied initial employment and promotion in the Bridgeport

Fire Department".

The Court found the city had violated Title VII. Because the pass rate for minority candidates was less than one-third of that for non-minorities, the exam was determined to have a disparate impact on the plaintiffs and the class they represented. The Court found two major flaws in the administered exam: First, no rational relationship was established between the skills needed and the written exam. The test was developed without compiling any critical work behaviors list and with no effort to rank the rated skills in terms of their importance to the job.

The Fire Chief testified that "there might be an inverse correlation between those who passed the exam and those who were most qualified to be firefighters". He also stated that superior physical ability and intelligence are the two most important attributes, but that the 1975 hiring process used a pass/fail agility test and high scores on comprehensive questions (i.e., indicating curiousness, analytical thinking, etc.) were weighed negatively. Setting twelve as the minimum passing score, a choice the Court found "bore no relation to normal expectations of proficiency", is the second major flaw with the exam. By lowering the passing score from twelve to six, the discriminatory impact of the exam would have been significantly eliminated.

The Court found that the city had a strong

reputation for discriminating in employment. Affirmative Action programs were not adopted until threats were made concerning their award of seven million dollars in federal funds, and essentially no effort was made to recruit minority persons for the fire department. The city had "engaged in a continuing pattern and practice of ...actively deterring minority persons who had sought to become firefighters". For example, Elias Castro, a Hispanic with four years experience with the United States Air Force as a firefighter, in the middle of the afternoon on the last day for filing applications with the Civil Service Commission, was told he was too late. He was not allowed to speak with the superior of the individual informing him of his ineligibility, and was not informed of any means of appealing or filing a complaint. He did not get to take the 1975 exam.

The Court concluded that the 1975 exam could not continue to be used, and rewarded various forms of relief to minority candidates. Among them was the immediate hiring of blacks and hispanics who filed applications with the Civil Service Office for the 1975 firefighters exam and who passed both the agility test and the medical exams. Back pay and seniority retroactive to October 1976 was also awarded. The city was required to make all future selections from a pool of qualified minority candidates until the number of minority candidates hired since 1975 equalled the number of white candidates hired

since that time, and then to hire one-half of all firefighters from the minority pool until the number of minority firefighters totaled 125. (Association Against Discrimination v. City of Bridgeport)

Courts have recognized three methods of demonstrating the job relatedness of employment examinations:

1. "Empirical" or "criterion" validity: demonstrated by identifying criteria that indicate successful job performance and then correlating test scores and the criteria so identified.

2. "Construct" validity: demonstrated by examinations structured to measure the degree to which job applicants have identifiable characteristics that have been determined to be important in successful job performance.

3. "Content" validity: demonstrated by tests whose content closely approximates tasks to be performed on the job by the applicant.

Content validation is perhaps the most important measure when testing the validity of MBO merit standards. It is important for businesses to closely relate their merit standards to work behavior in order to improve this measure of validity. Thus, as long as standards are carefully selected and properly implemented and defined, they should be content valid just by their design and should also be considered bona fide. (Gatewood, 1971)

When test scores are conducted with supervisors' ratings, "the validation...is of questionable value and may simply prove that the test has the same bias as the supervisor" (Albemare Paper Company v. Moody, 1973).

If different treatment administered under MBO results in intentional discrimination, even a bona fide MBO merit system is illegal under Title VII. Merit systems are also subject to potential disparate impact liability (International Brotherhood of Teamsters). The net effect of the merit system provision of Title VII is to shield the routine operation of the bona fide MBO merit system from such liability.

Intentional discrimination can occur in two main forms: on an individual or systematic basis. An example of such discrimination on an individual level is represented in the case McDonnell Douglas Corporation v. Green:

Percy Green was a black mechanic laid off when a general workforce reduction occurred at McDonnell Douglas. Green then joined a protest against alleged racial discrimination by participating in a "stall in" where he, and other former employees, used their cars to block entrances into the plant during the morning rush hour. When McDonnell Douglas later advertised for mechanics, Green applied but was turned down on the grounds of his participation in the stall in. Green filed a suit with the EEOC claiming violation of ss703(a) (1) (refusing to

rehire an employee because of his race) and ss704(a) (refusing to rehire an employee because of his activities in protesting racial discrimination).

The District Court dismissed the ss704(a) charge on the grounds that McDonnell Douglas' refusal to rehire Green was indeed based on the illegal and unprotected conduct of the employee during the stall in. The Court of Appeals affirmed. The district court dismissed the ss703(a)(1) claim, on the grounds that the commission had failed to make a determination of the reasonable cause to believe McDonnell Douglas had violated this section. The Court of Appeals reversed the dismissal holding that a prior commission determination of reasonable cause was not a jurisdictional prerequisite to raising a ss703(a)(1) claim in federal court. The court established that the complaintant in a Title VII trial must carry the initial burden under the statute of establishing a prima facie case of racial discrimination. This may be done by showing:

1. that an individual belongs to a racial minority group
2. that the individual applied and was qualified for the job which the employer was seeking application
3. that despite his qualifications, the individual was rejected
4. that, after his rejection, the position remained open and the employer continued to seek applications from

persons of the applicant's qualifications.

The Supreme Court agreed and remanded the case to the district court and stated that on retrial, the plaintiff must be afforded a fair opportunity to demonstrate in connection with his ss703(a)(1) claim that the defendant's assigned reason for refusing to re-employ the plaintiff was pretextual or discriminatory in its application.

An example of discrimination on a systematic basis may be found in the case Trans World Airlines v. Hardison. Hardison was employed by TWA in a department that operated twenty-four hours a day in connection with an airplane maintenance and overhaul base. The collective bargaining agreement between TWA and the International Association of Machinists and Aerospace Workers includes a seniority system set up as follows: First choice of the job and shift assignments, as they become available, go to the most senior employees while junior employees are required to work when enough employees to work at a particular time or in a particular place can not be found to meet the needs of TWA at that time. When Hardison's religious beliefs, which prohibit him from working on Saturdays, his Sabbath, became a problem, attempts were made to accomcdate him. Temporarily successful, because his job at the time had sufficient seniority to observe his Sabbath on Saturday, the situation quickly became unmanageable when he sought

and was transferred to a new job. Here he was asked to work on Saturday, and lacking sufficient seniority, he found the situation unsatisfactory.

TWA agreed to allow the union to seek a change of work assignments. The union, however, remained unwilling to violate the seniority system and thus, refused to find Hardison a new assignment. TWA rejected a proposal that Hardison work only four days a week on the grounds that this would impair critical functions in the airline operations. No accomodations could be reached and Hardison was discharged.

His discharge allegedly constitutes religious discrimination in violation of the ss703(a)(1) of the Civil Rights Act of 1964, which makes it unlawful for an employer to discriminate on the basis of religion. It was based on the 1967 EEOC guideline in effect at the time requiring an employer, short of "undue hardship" to make "reasonable accomodations to the religious needs of its employees". The Circuit Court of Appeals held that TWA had not satisfied its duty to accomodate EEOC guidelines. TWA rejected three reasonable alternatives which could have satisfied its obligation without "undue hardship":

1. TWA could have permitted Hardison to work a four day week, utilizing a supervisor or another employee on duty elsewhere, even though this would have caused other shop functions to suffer.

2. TWA could have filled Hardison's Saturday shift with another available personnel member, even though this would have involved premium overtime pay.

3. TWA could have arranged a "swap" between Hardison and another employee either from another shift or for the Sabbath day, even though this would have involved a breach of the seniority system.

The Supreme Court, however, held that TWA had made reasonable efforts to accomodate Hardison's religious needs and did not violate Title VII. The Court of Appeal alternatives, it determined, would have been an undue hardship within EEOC guidelines based on the following:

1. Seniority systems represent a significant accommodation to the needs, both religious and secular, of all of TWA's employees.

2. TWA cannot be faulted for having failed to work out a shift or job swap for Hardison. Both TWA and the union had approved the seniority system and the union was unwilling to entertain a variance over the objections of employees senior to Hardison. If TWA had arranged for the swap, they would have breached the collective bargaining agreement. "It would be anomalous to conclude that by "reasonable accomodations", Congress meant employers to deny the shift and job preferences of some employees, as well as deprive them of their contract rights to accomodate the religious needs of others".

3. Absent a discriminatory purpose, a seniority system cannot be an unlawful employment practice even if the system is discriminatory in its effects. (Title VII, ss703h)

4. To require TWA to bear more than a de minimus cost in order to give Hardison Saturdays off would be an undue hardship, for, like abandonment of the seniority system, to require TWA to bear additional costs when no such costs are incurred to give other employees the days off they want would involve unequal treatment of employees on the basis of their religion.

Simply, the employer cannot be forced to discriminate against some employees to enable others to observe their Sabbath.

Typically, disparate treatments of individuals are isolated departures from otherwise legitimate MBO merit systems. It would involve, for example, different merit standards applied to equal performances by employees of different race, sex or national origin, who received the same merit rating. This is illegal if there was a given intent to discriminate, regardless of whether or not the system was bona fide. These deviations are also illegal under the Equal Pay Act if different pay is alloted for equal workers of the opposite sex. Actions such as these provide legal justice for suits regardless of whether or not top management approves such a system.

As we have seen, the potential of both intentional and

unintentional discrimination in merit systems in general is great, and this potential for being a tremendous productivity impediment with all of its ramifications is obvious. The more specialized the system, such as MBO, the greater the risk, especially when the employer is burdened with proving that their system is indeed a bona fide merit system falling within the exemptions of Title VII and the Equal Pay Act. As outlined above, there are steps the employer can take to minimize these risks, the most important of which are:

1. Developing objective and comparable criteria which are race, sex and religion-blind, and which are clearly communicated.

2. Defining these standards in writing and the resultant evaluations in writing.

3. Maintaining a muliple-person rating panel when making employment decisions in order to avoid suspicions of individual biases.

Some other recommendations include:

4. Making sure that an appraisal system's reliability and validity information is documented.

5. Providing formal training with written instructions to evaluators.

6. Developing clear performance criteria from job analyses or job descriptions to avoid trait oriented terms and place stress on behavior oriented performance dimensions.

7. Allowing disputed appraisals to be appealed to a higher level for review.

While these procedures will definitely add to the cost of implementing an MBO system, these costs will be money well spent when considering the potential costs and disruptions and resultant loss in productivity arising from Title VII and Equal Pay Act suits.

CHAPTER VIII

SUMMARY

We have seen that there are many facets to productivity in an organization and that every aspect has a synergistic relationship to the total productivity. Although only several aspects of productivity were discussed in this report, it is important to remember that the "big picture" must be kept in mind at all times in order to "make the whole elephant move". Also, the construction industry must respond to the need for change, as the world rapidly changes around it. The only choice is "between a planned change in a desired direction or a forced, haphazard change in an undesired direction" (Mali, 1978, p.38). Hopefully, by getting the entire industry on the productivity bandwagon, we will continue to see a positive change in our trends of productivity.

BIBLIOGRAPHY

Albrecht, Karl, Successful Management by Objectives, Prentice-Hall Inc., Englewood Cliff, N.J., 1978.

Clough, Richard H. Construction Contracting, John Wiley & Sons, New York, 1981.

Drewin, F.J., Construction Productivity, Elsevier, New York, 1982.

Edwards, Mark R., et al, Improving Comparability in Performance Appraisal, Business Horisons, Vol. 26, November 5, Sept/Oct 1983.

Galbraith, Jay R., Organization Design, Addison-Wesley Publishing Company, 1977.

Gatewood, Robert D., Content Validity and EEOC: A Useful Alternative for Selection, Personnel Journal, August, 1977, Vol 56, No. 8.

Glueck, William F., Personnel: A Diagnostic Approach Business Publications, Inc., Plano, Texas, 1982.

Kreitner, Robert, Management, Houghton Mifflin Company, Boston, 1983.

Mali, Paul, How to Manage by Objectives, John Wiley & Sons, New York, 1975.

Mali, Paul, Improving Total Productivity, John Wiley & Sons, New York, 1978.

Migliore, R. Henry, MBO: Blue Collar to Top Executive The Bureau of National Affairs, Inc., Wash. D.C., 1977.

National Academy of Sciences, A National Strategy For Improving Productivity In Building and Construction, Technology Assessment and Utilization Committee, Building Research Advisory Board, Commission on Sociotechnical Systems, National Research Council, Washington, D.C., 1980.

Patten, Thomas R. Jr., A Manager's Guide to Performance Appraisal, The Area Press, N.Y., 1982.

Pritchett, Harry & Associates, Effective Executive Performance for Today and Tomorrow, (Presented to Naval Facilities Engineering Command), Fairfax, Virginia.

Ross, Joel E. Managing Productivity, Prentice-Hall Co., Reston, Virginia, 1977.

Straussman, Jeffrey D., Public Administration, Holt, Rinehart and Winston, 1985.

Swanson, Stephen C., The Affect of The Supreme Court's Seniority Decisions, Personnel Journal, Volume 56, No. 12, December, 1977.

The Business Roundtable, Measuring Productivity in Construction, New York, Sept., 1982.

Vaughn, Richard C., Legal Aspects of Engineering, Kendall/Hunt Publishing Company, 1977.

COURT CASES

Association Against Discrimination v. City of Bridgeport, 647 F2d 256 (CA-2, 1981).

Corning Glass Works v. Brennan, 417 US 188 (us SCt, 1974), 7 EPD pp 9374B.

EEOC V. Aetna Insurance Co., 616 F2d 719 (CA-4, 1980), 22 EPD pp 30, 881; 29 CFR 800.142, 800.144 (1981).

Frink v. United States Navy (DC Pa, 1977), 16 FEB 77.

Guardians Association of New York City v. Civil Service Commission, 633 F2d 232 (CA-2, 1980).

International Brotherhood of Teamsters v. U.S., 431 US 324 (US SCt, 1977).

McDonnell Douglas Corporation v. Green, 411 US 792 (US SCt, 1973).

Robinson v. Lorillard Corp., 319 FSupp 835 (DC NC, 1970), 2 EPD pp 10, 194.

Thompson v. McDonnell Douglas Corp., 416 FSupp 972 (DC Mo., 1976).

Trans World Arilines v. Hardison, 432 US63 (US SCt, 1977).

217305

Thesis
B8184 Brown
c.1 Managing productivi-
ty.

217305

Thesis
B8184 Brown
c.1 Managing productivi-
ty.

thesB8184
Managing productivity.
3 2768 000 65771 2
DUDLEY KNOX LIBRARY